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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/934,370	08/22/2001	Guenter W. Brune	DCI-21	7678

21833 7590 02/18/2003

BOULDER PATENT SERVICE INC
1021 GAPTER ROAD
BOULDER, CO 803032924

EXAMINER

AURORA, REENA

ART UNIT	PAPER NUMBER
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2862

DATE MAILED: 02/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/934,370

Applicant(s)

BRUNE ET AL.

Examiner

Reena Aurora

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 91 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1 - 91 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1 - 47, drawn to a method of moving a boring tool through the ground within a given region in which a cable is buried and transmitting a boring tool locating signal from the boring tool; transmitting a cable locating signal from the cable; measuring intensities of the boring tool locating signal and cable locating signal; establishing a pitch orientation of the boring tool and using the measured intensities and established pitch orientation determining a positional relationship to relative scale including at least the boring tool and the cable in the region, classified in class 324, subclass 326.
- II. Claims 48 - 53, drawn to a system for locating an in-ground cable in a region using a cable locating signal transmitted from the length of the cable using a locator, sensing a first locating signal strength at a first operator; measuring the first operator determined distance; moving the locator to a second operator determined distance; sensing a second locating signal strength; measuring the second operator determined distance and determining the depth of the cable using the first and second signal strengths and first and second distances, classified in class 324, subclass 67.

- III. Claims 54 - 73, drawn to a system for locating an in-ground cable in a region using a locating signal transmitted from the length of the cable and determining the depth of the cable using a locator at a first point with a reference to the surface of the ground, defining horizontal locating direction toward a second point; measuring a first intensity of the cable locating signal; moving the locator to a second point; measuring a second intensity of the cable locating signal; determining a distance between the first and second points along the locating direction and using the first and second intensities and the determined distance between the first and second points to determine the depth of the cable, classified in class 324, subclass 323.
- IV. Claims 74 - 85, drawn to a region including at least one straight cable in the ground and the cable locating a locating signal; measuring a local flux intensity and using the local flux intensity to establish an approximate horizontal distance to the cable, classified in class 324, subclass 346.
- V. Claims 86 - 91, drawn to a system for locating as in-ground cable in a region using a cable locating signal transmitted from the length of the cable; using a locator, sensing a first locating signal strength at a first operator determined distance generally in vertical alignment with a surface position; measuring the first operator determined distance from the surface position; moving the locator to a second operator determined distance from the surface position generally in vertical alignment with the

surface position; sensing a second locating signal strength at the second operator determined distance; measuring the second operator determined distance from the surface position; measuring the horizontal distance from the surface position to a point directly overhead of the cable in a direction that is normal to a surface projection of the cable and determining the depth of the cable using the first and second locating signal strengths, the first and second distances and the measured horizontal distance, classified in class 324, subclass 329.

2. The inventions are distinct, each from the other because:

Group I, II, III, IV and V are distinct as they embody separate inventive concepts, each capable of supporting separate patents.

3. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for other groups or vice versa, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at

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least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).


6. A telephone call was made to Jay Beyer on 02/12/2003 to request an oral election to the above restriction requirement, but did not result in an election being made.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reena Aurora whose telephone number is 703-605-1372. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 703-305-4816. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3432 for regular communications and 703-305-3432 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


Reena Aurora
February 12, 2003


EDWARD LEFKOWITZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800